E. PEARL.

CRUTCH.

APPLICATION FILED DEC. 16, 1918.

1,317,386. Patented Sept. 30, 1919.

Fig. 3

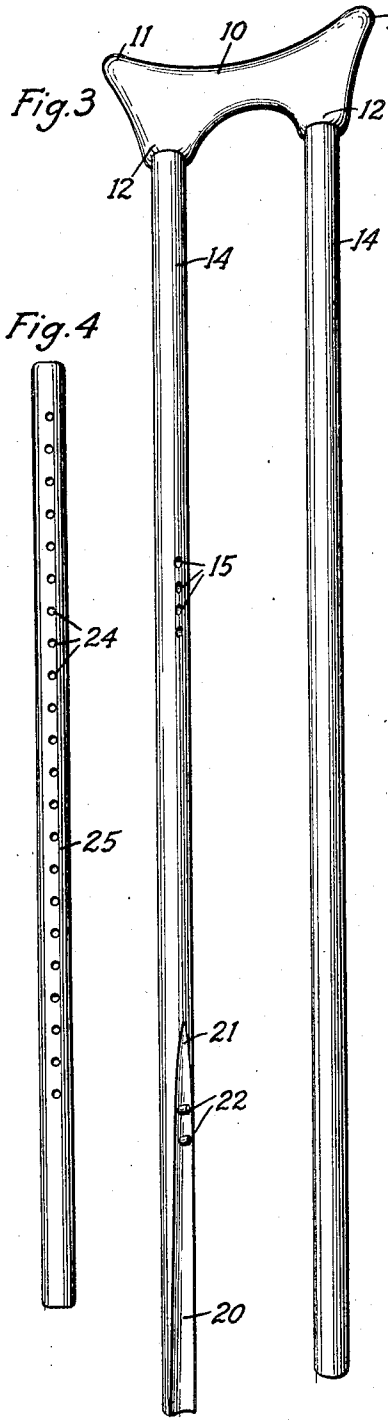


Fig. 4

Fig. 7

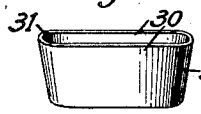


Fig. 8.

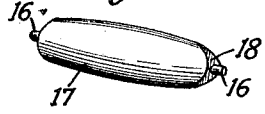


Fig. 5.

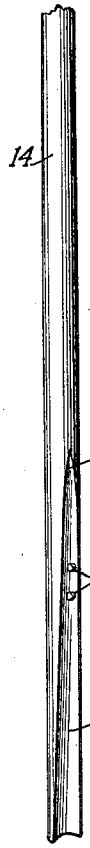


Fig. 6.

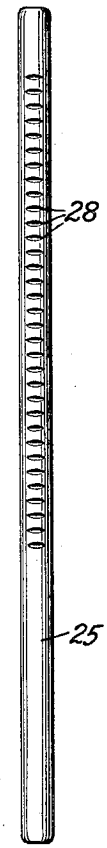


Fig. 1

Fig. 2

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CRUTCH.

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To all whom it may concern:

Be it known that I, EUGENE PEARL, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented new and useful Improvements in Crutches, of which the following is a specification.

This invention relates to improvements in crutches such as are used for persons lame or maimed in their lower limbs.

One of the main objects of the invention is to provide a crutch of exceedingly simple construction, which may be readily adjusted as to its overall length and also the distance between the hand piece or grip and the head, such adjustments being effected without the use of tools or appliances of any kind.

A further object is to provide a crutch having its entire exterior perfectly smooth and free from projections of any kind whatever, and

Finally, to provide an extensible or adjustable crutch instantly adaptable to persons of various heights, and arm lengths—a crutch devoid of objectionable bolts, nuts and screws, of such flexible construction that it will yield to the various positions of the body necessary when in use. No corners or protruding parts to wear and chafe the clothing or body.

These and other like objects, which will become more fully apparent as the description progresses, are attained by the novel construction and combination of parts hereinafter described, and shown in the accompanying drawings, forming a material part of this disclosure, and in which:—

Figure 1 is a side elevational view, showing a crutch made in accordance with the invention.

Fig. 2 is an enlarged transverse sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a perspective view showing a crutch head and pair of staffs engaged therewith.

Fig. 4 is a side elevational view of the adjustable central leg engageable between the staffs.

Fig. 5 is a fragmentary elevational view, looking at the inner side of one of the staffs, slightly modified.

Fig. 6 is a side elevational view, showing a modified form of crutch leg.

Fig. 7 is a perspective view of the sleeve clamp used to engage the staffs with the center leg, and

Fig. 8 is a perspective view showing a type of handle grip engageable with the crutch staffs.

In the drawings, the numeral 10, indicates a conventional type of crutch head having horn-like end elements 11, and also downwardly extending projections 12, the same being bored to receive the staffs 14, which are engaged within the head in any preferred manner.

It will be understood that the staff head is rounded, smooth and highly finished so as to prevent abrasion of the garments coming in contact therewith, the head resting in the arm pit with which it is shaped in conformity so as to be used with comfort.

The staffs 14 are here shown as cylindrical in cross section and substantially straight when in a free or unconfined condition, but obviously may be of any preferred section the material being preferably wood of stiff, tough, but of resilient nature. In the inner sides of each of the staffs are formed a plurality of circular indentations 15, those in one registering with those in the opposite side, and adapted to receive pins or projections 16 extending from the ends of the handle 17, here shown to be barrel shaped, but which may be made of any desired shape whatever, the ends 18 being formed concavely to agree with the circular shape of the staffs 14, so that the joints, when the handle is assembled with the staffs, are close fitting and neat appearing.

Formed longitudinally in the inner sides of the staffs 14, at their lower ends, are concave recesses 20, the same extending from a point at the extreme bottom of the staffs, removing two thirds of its diameter outwardly to the point 21 where they terminate, merging with the surface of the staffs, and fixed in the upper portion of the recesses 20, are one or more pins 22, the same extending slightly outward beyond the radius of the staff, and adapted to engage with any of the plurality of openings 24, formed in opposite sides of the leg 25, which it is to be understood fits neatly within the recesses 20, the lower end of the leg having secured upon it a rubber tip 26 adapted to absorb and minimize jars due to contact with the surface passed over.

In the modification shown in Figs. 5 and 6, the pins 27 shown set in the recesses 20, are much shorter, beveled toward the center, and of lesser magnitude, the same being suited to enter any of the shallow, transverse recesses 28 formed at regular spaced intervals upon opposite sides of the leg 25, as it may be that the cross recesses tend to weaken the center staff less than the indented openings 24.

Engageable with the outer sides of the staffs, when the leg or center staff 25 has been placed therebetween, is a clamp sleeve 30 having parallel sides, and curved, diagonally formed ends 31, the interior of the sleeve being suited to fit snugly upon the staff elements so that as the sleeve is drawn upwardly toward the head as to cause the elements to be confined closely and firmly together, holding the leg against longitudinal movement, and also preventing it from moving out of the recesses 20.

In operation, the head and staff elements having been assembled, as shown in Fig. 3, the leg or center element is entered therebetween, at which time the clamp sleeve 30 is loosely positioned upon its lower end, the staffs brought together by hand pressure or a tourniquet if very stiff, and the pins 22 entered into the desired corresponding openings 24, (or the similar pins 27 entered into the transverse recesses 28,) the handle 17 having previously been placed in position, whereupon the sleeve is drawn upward, and due to the slight angularity of its ends is firmly held by frictional engagement with the bowed surfaces of the staffs, clamping, binding and confining the several parts in intimate relation, preventing any movement in any direction whatsoever therebetween.

From the foregoing it will be seen that the handle 17 may be raised or lowered, and when in place is prevented from turning by the extending elements 18, and also prevented from moving lengthwise of the staffs due to the extending pins 16 and openings 15, while the leg or center element 25 is firmly engaged by connecting pins in appropriate openings so as to lengthen or shorten the operative length of the crutch without the use of any implements whatever.

Attention is further called to the fact that no nuts, bolts, screws or other objectionable extending elements are used whatever, that the pins and their corresponding openings do not weaken the staff sides to any material degree, and that adjustments of the handle and operative crutch length may be effected in any expeditious manner, while the strength of the crutch is substantially equal to one of unitary or solid construction.

I claim:—

A crutch comprising a pair of staffs, a foot piece disposed between the staffs, said staffs having their lower end portions converging and formed with relatively long recesses which latter receive the foot piece and engage the latter on opposite sides thereof, the staffs and foot piece having interengaging parts in the upper portions of the recesses to prevent any lengthwise movement of the foot piece, and a clamping sleeve engaging around the staffs and having downwardly convergent ends which conformably engage the outer sides of the respective staffs to hold the latter against the foot piece, said clamping sleeve when in position being disposed at a distance above the lower terminals of the staffs so as to clamp the latter against opposite sides of the foot piece.

In testimony whereof I have signed my name to this specification.

EUGENE PEARL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."